

IN THE CLAIMS:

1. (Currently Amended) An open-type magnet device for MRI, comprising:
a pair of an upper and a lower magnet assemblies which are arranged to
vertically oppose to each other so as to generate a uniform static magnetic field in a
space region which covers a test portion of a subject, ~~person~~, and each of which
includes: a main superconductive coil for generating a uniform static magnetic field
therebetween and an adjusting superconductive coil for adjusting magnetic field
uniformity of the uniform static magnetic field;

a cooling vessel containing the main superconductive coil and the adjusting
superconductive coil for maintaining a superconductive state; and

magnetic field adjusting means arranged at the uniform static magnetic field
space side of the cooling vessel, so as to further adjust the magnetic field uniformity
of the uniform static magnetic field space region.

2. (Original) The open-type magnet device for MRI as claimed in Claim 1,
wherein the cooling vessel is a doughnut-shaped cooling vessel having a through
hole in a center portion thereof and at least one of the magnetic field adjusting
means is arranged at a predetermined position of the through hole.

3. (Currently Amended) ~~The open-type magnet device for MRI as claimed in~~
~~Claim 2,~~ An open-type magnet device for MRI, comprising:

a pair of an upper and a lower magnet assemblies which are arranged to
oppose to each other so as to generate a uniform static magnetic field in a space

region which covers a test portion of a subject, ~~person,~~ and each of which includes: a
main superconductive coil for generating a uniform static magnetic field
therebetween and an adjusting superconductive coil for adjusting magnetic field
uniformity of the uniform static magnetic field;

a cooling vessel containing the main superconductive coil and the adjusting
superconductive coil for maintaining a superconductive state; and

magnetic field adjusting means arranged at the uniform static magnetic field
space side of the cooling vessel, so as to further adjust the magnetic field uniformity
of the uniform static magnetic field space region;

wherein the cooling vessel is a doughnut-shaped cooling vessel having a
through hole in a center portion thereof and the magnetic field adjusting means is
arranged at a predetermined position of the through hole; and

the magnetic field adjusting means is also ~~detachably attached~~ arranged to
the side of the uniform static magnetic field space and outside the through hole.

4. (Currently Amended) ~~The open-type magnet device for MRI as claimed in~~
~~Claim 1,~~ An open-type magnet device for MRI, comprising:

a pair of an upper and a lower magnet assemblies which are arranged to
oppose to each other so as to generate a uniform static magnetic field in a space
region which covers a test portion of a subject, and each of which includes: a main
superconductive coil for generating a uniform static magnetic field therebetween and
an adjusting superconductive coil for adjusting magnetic field uniformity of the
uniform static magnetic field;

a cooling vessel containing the main superconductive coil and the adjusting superconductive coil for maintaining a superconductive state; and

magnetic field adjusting means arranged at the uniform static magnetic field space side of the cooling vessel, so as to further adjust the magnetic field uniformity of the uniform static magnetic field space region;

wherein the cooling vessel is a cylinder-shaped or a doughnut-shaped cooling vessel having a through hole in a center portion thereof and the magnetic field adjusting means is arranged in a region range of $2R/3$ wherein R represents a radius of the opposing surface of the cooling vessel.

5. (Original) The open-type magnet device for MRI as claimed in Claim 1, wherein a gradient magnetic field coil is arranged at the uniform magnetic field space region side of each of the cooling vessels, and the magnetic adjusting means is arranged at the uniform static magnetic field space side of the gradient magnetic field coils.

6. (Currently Amended) The open-type magnet device for MRI as claimed in Claim 5, wherein the gradient magnetic field coils include a main coil and a shield coil, and at least one of the magnetic field adjusting means is arranged at at least one of following positions: at the uniform static magnetic field space side of the main coil, between the main coil and the shield coil, and between the shield coil and the cooling vessel.

7. (Currently Amended) An open-type magnet device for MRI, comprising:

a pair of an upper and a lower magnet assemblies which are arranged to ~~vertically~~ oppose to each other so as to generate a uniform static magnetic field in a space region which covers a test portion of a subject, ~~person~~, and each of which includes: a main superconductive coil for generating a uniform static magnetic field therebetween and an adjusting superconductive coil for adjusting magnetic field uniformity of the uniform static magnetic field;

a doughnut-shaped cooling vessel having a through hole in a center portion thereof and containing the main superconductive coil and adjusting superconductive coil for maintaining a superconductive state; and

magnetic field adjusting means arranged at a predetermined position in the through hole of the cooling vessel, so as to further adjust magnetic field uniformity of the uniform static magnetic field space region;

wherein the magnetic field adjusting means is also arranged to the side of the uniform static magnetic field space and outside the through hole.

8. (Currently Amended) An open-type magnet device for MRI, comprising:
a pair of an upper and a lower magnetic field generating coils which are arranged so as to ~~vertically~~ oppose to each other and to cover a space region of a test portion of a subject; ~~person~~;

respective magnetic field adjusting coils;

containers for containing the ~~respective~~ upper and lower magnetic field generating coils and the respective magnetic field adjusting coils; and

at least one magnetic shim arranged at the uniform static magnetic space region side of the respective containers, so as to further adjust magnetic field uniformity of the uniform static magnetic field space region.

9. (Currently Amended) The open-type magnet device for MRI as claimed in Claim 8, wherein the containers are doughnut-shaped containers having a through hole at a center portion thereof and at least one of the at least one magnetic shim is arranged at a predetermined position in the through hole.

10. (Currently Amended) The open-type magnet device for MRI as claimed in Claim 8, wherein a gradient magnetic field coil is arranged at the uniform static magnetic field space region side of each of the containers and at least one of the at least one magnetic shim is arranged at the uniform magnetic field space region side of the gradient magnetic field coil.

11. (Previously presented) The open-type magnetic device for MRI as claimed in claim 8, wherein the magnetic shim has a block-like shape.

12. (Previously presented) The open-type magnet device for MRI as claimed in Claim 1, wherein the magnetic field adjusting means is arranged between the uniform static magnetic field space and the cooling vessel.

13. (Previously presented) The open-type magnet device for MRI as claimed in Claim 1, wherein the magnetic field adjusting means is arranged along a cooling vessel side-wall which faces the uniform static magnetic field space.

14. (Previously presented) The open-type magnet device for MRI as claimed in Claim 1, wherein ones of the magnetic field adjusting means are provided on differing layers arranged between the uniform static magnetic field space and the cooling vessel.

15. (Previously presented) The open-type magnet device for MRI as claimed in Claim 7, comprising at least one additional magnetic field adjusting means arranged between the uniform static magnetic field space and the cooling vessel.

16. (Currently Amended) The open-type magnet device for MRI as claimed in Claim 7, wherein at least one of the magnetic field adjusting means is also arranged along a cooling vessel side-wall which faces a central longitudinal axis of the through hole of the cooling vessel.

17. (Previously presented) The open-type magnet device for MRI as claimed in Claim 7, comprising additional ones of the magnetic field adjusting means provided on differing layers arranged between the uniform static magnetic field space and the cooling vessel.

18. (Currently Amended) The open-type magnet device for MRI as claimed in Claim 8, wherein ~~the magnetic field adjusting means~~ at least one of the at least one magnetic shim is arranged between the uniform static magnetic field space and at least one of the containers.

19. (Currently Amended) The open-type magnet device for MRI as claimed in Claim 8, wherein ~~the magnetic field adjusting means~~ at least one of the at least one magnetic shim is arranged along a container side-wall which faces the uniform static magnetic field space.

20. (Currently Amended) The open-type magnet device for MRI as claimed in Claim 8, wherein ones of the ~~magnetic field adjusting means~~ at least one magnetic shim are provided on differing layers arranged between the uniform static magnetic field space and at least one of the containers.

21. (New) The open-type magnet device for MRI as claimed in Claim 1, wherein at least one of the magnetic field means is detachably attached to the inside or outside of the through hole.

22. (New) The open-type magnet device for MRI as claimed in Claim 7, wherein at least one of the magnetic field means is detachably attached to the inside or outside of the through hole.

23. (New) The open-type magnet device for MRI as claimed in Claim 8, wherein at least one of the at least one magnetic shim is detachably attached to the inside or outside of the through hole.

24. (New) The open-type magnet device for MRI as claimed in Claim 1, wherein the magnetic field adjusting means is between the space region and the cooling vessel, at the uniform static magnetic field space side of the cooling vessel.

25. (New) The open-type magnet device for MRI as claimed in Claim 8, wherein the at least one magnetic shim is between the space region and the containers, at the uniform static magnetic field space side of the containers.